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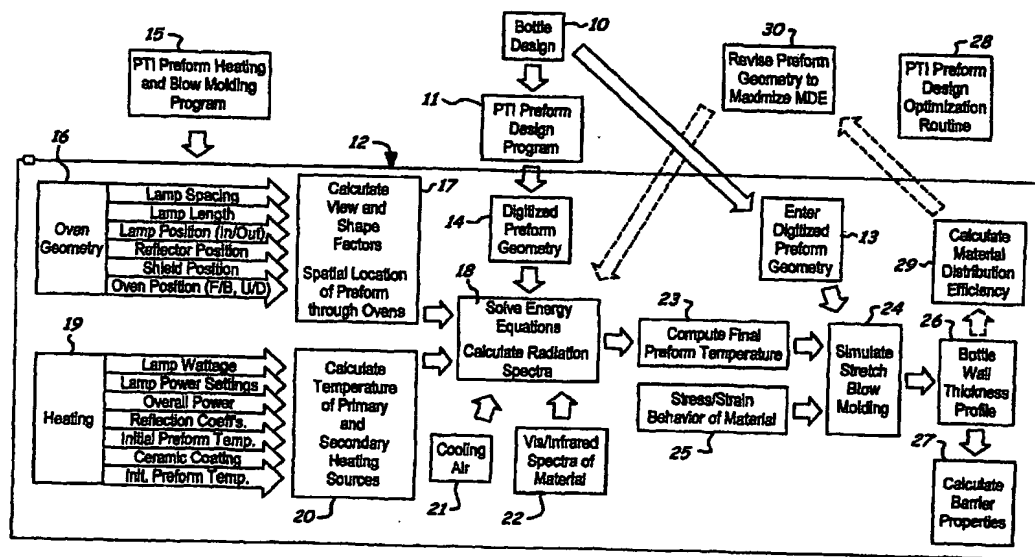
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[Continued on next page]

- (54) Title:** APPARATUS AND METHOD FOR VIRTUAL PROTOTYPING OF BLOW MOLDED OBJECTS



- (57) Abstract:** A method is provided for simulating the heating of a plastic preform. A preform geometry is input into a preform design program (15). Oven geometry and spatial location of the preform throughout at least one oven is provided (16). Heating information is provided and the temperatures of the primary and secondary sources are calculated (19). Energy equations are solved based upon the preform geometry, the spatial location of the preform, the temperature the cooling air, and the absorption spectra of the preform material (18). At least one cross sectional thermal profile of a final heated preform is calculated (23, 24, 30).



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/01376

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/10, 7/60, 19/00; G06G 7/48, 7/50, 7/58, 7/66; G05B 13/02; B29C 39/00, 45/00
US CL : 703/2, 6, 9, 12; 700/29, 30, 31, 118, 119, 182, 183, 199, 200, 202, 204, 205; 702/136, 155

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 703/2, 6, 9, 12; 700/29, 30, 31, 118, 119, 182, 183, 199, 200, 202, 204, 205; 702/136, 155

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	U.S. 5,458,825 A (GROLMAN et al.) 17 October 1995 (17.10.1995), Abstract, col. 3, lines 28 et seq.	1-22
A	U.S. 5,937,265 A (PRATT et al.) 10 August 1999 (10.08.1999), Abstract, col. 3, lines 7 et seq.	1-22
X	U.S. 5,552,995 A (SEBASTIAN) 03 September 1996 (03.09.1996), Abstract, Figures 1-8, col. 1, lines 13 et seq., col. 5, lines 9 et seq., and col. 10, lines 60 et seq.	1-21
X	U.S. Re. 36,602 A (SEBASTIAN) 07 March 2000 (07.03.2000), Abstract, Figures 1-8, col. 1, lines 17 et seq., col. 5, lines 11 et seq., and col. 10, lines 62 et seq.	1-21

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"P" document published prior to the international filing date but later than the priority date claimed

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"X"

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"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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document member of the same patent family

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INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:
EAST and ACM

Search terms: virtual, simulat\$, preform, form, rapid, prototyping, thermal, energy near2 (calculat\$ or equations), optic or spectra\$